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Fuel Focus

Understanding Gasoline Markets in Canada and Economic Drivers Influencing Prices

Volume 7, Issue 9

May 18, 2012

Canada

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National Overview

Canadian Retail Gasoline Prices Increased 1 Cent per Litre from Last Week

After a four-week decline, average Canadian retail gasoline prices for the week ending May 15, 2012, increased by 1 cent per litre to $1.30 per litre from the previous week.

Average retail pump prices increased slightly despite lower North American wholesale gasoline and crude oil prices. This is partly due to a sudden increase in wholesale gasoline prices in Vancouver, as seen in Figure 4, caused by a temporary west coast refinery problem.

Diesel fuel prices decreased by nearly 2 cents per litre to $1.26 per litre from the previous week. Prices are 1 cent per litre higher compared to the same period last year. Furnace oil prices are up by less than 1 cent per litre compared to last week, and are 4 cents per litre higher than at this time last year.

Recent Developments

- **Biofuel Mandate and U.S. Refinery Closures**: Industry officials warn the U.S. Senate-House Joint Economic Committee that Philadelphia area refinery closures will be only the beginning of shutdowns nationwide if the federal government does not change several key regulations, with respect to ethanol mandates as part of the 2007 Energy Independence and Security Act. They noted that if the fuel substitutions from 2012 to 2022 mandated under the Act are maintained, the U.S. could lose an additional 10% of its capacity. (Source: Oil and Gas Journal, April 27, 2012)
- **Changes in Fuel Standards Could Reduce CO_2 Emissions**: Car electrification (full or partial), natural gas and cellulosic ethanol are alternative ways to cut North American vehicle carbon-dioxide (CO_2) emissions and oil import dependence. But according to a former General Motors fuels research director the automotive and fuel industries could be overlooking two relatively cheap, alternative ways to help accomplish those same goals, without any new fuels infrastructure or big powertrain costs by boosting gasoline octane and diesel cetane. (Source: Global Refining and Fuels Report, May 1, 2012)

Figure 1: Crude Oil and Regular Gasoline Price Comparison (National Average)

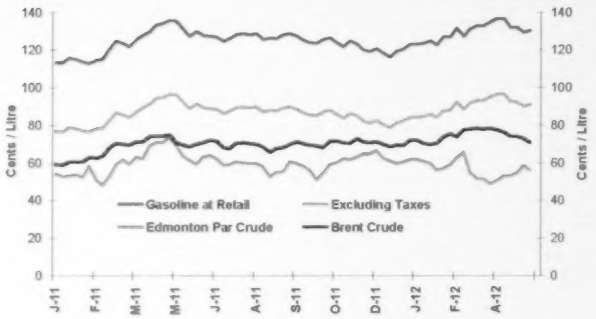
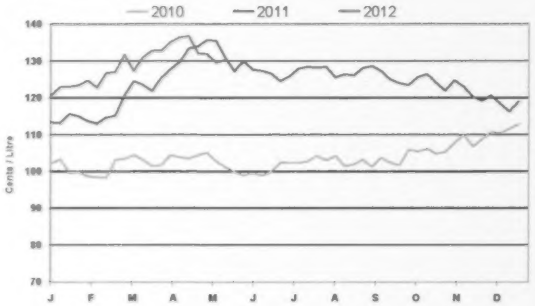


Figure 2: Weekly Regular Gasoline Prices



Changes in Fuel Prices

	Week of:	Change from:	
¢/L	2012-05-15	Previous Week	Last Year
Gasoline	130.3	+0.8	-0.6
Diesel	126.3	-1.7	+1.4
Furnace Oil	119.9	+0.4	+4.4

Source: NRCan

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Retail Gasoline Overview

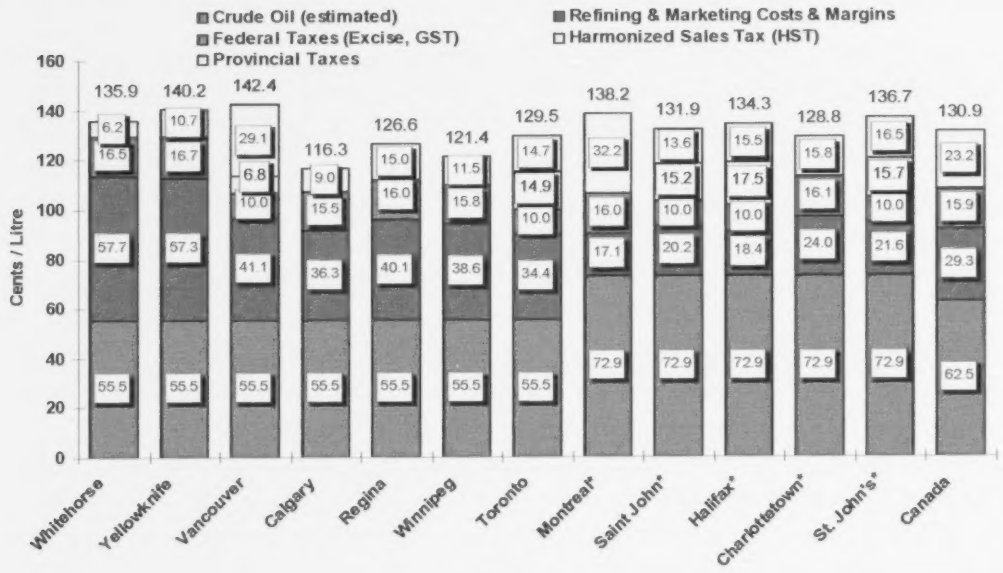
The **four-week average** Canadian pump price in selected cities across Canada was $1.31 per litre for the period ending May 15, 2012. This represents a 3 cent-per-litre decrease compared to the same period in 2011.

For the period ending May 15, 2012, **four-week average** crude oil prices increased by less than 1 cent per litre to 62 cents per litre. The crude oil price component of gasoline is 8 cents per litre lower than at the same time last year.

Over the last two weeks, the average gasoline price decrease in the individual centres was 3 cents per litre. Price fluctuations ranged between increases of less than 1 cent per litre in Vancouver to decreases of 6 cents per litre in Halifax.

The refining and marketing costs component declined by 4 cents per litre to 29 cents per litre. Compared to a year ago, margins are up by nearly 5 cents per litre.

Figure 3: Regular Gasoline Pump Prices in Selected Cities
Four-Week Average (April 24 to May 15, 2012)



Source: NRCan

** Regulated Markets*

Inflation Up 1.9% in March 2012

Statistics Canada's Consumer Price Index (CPI) released in April 2012 indicates that prices rose 1.9% between March 2011 and March 2012, following a 2.6% increase in February. This 0.7 percentage point difference was due largely to slower year-over-year increases in prices for food and energy.

Food prices rose 2.2% in the 12 months to March, following a 4.1% increase in February. The cost of energy advanced 5.1% in the 12 months to March, after rising 7.2% in February. The year-over-year increase in gasoline prices eased to 6.6% in March, following an 8.9% rise in February.

Consumer prices increased at a slower pace in all provinces. In Quebec, consumer prices rose 2.1% in the 12 months to March, after rising 3.2% in February. The difference was largely the result of slower price increases in food purchased from stores and gasoline. Prices in Ontario went up 2.2% year-over-year in March, following a 2.9% increase in February. This slower rate of increase was largely attributable to smaller price gains in food purchased from stores, clothing and footwear, and gasoline. In British Columbia, prices rose 1.6% on a year-over-year basis in March after increasing 1.7% the month before. Prices for gasoline increased 6.0%, after rising 4.2% in February. British Columbia and Manitoba were the only two provinces in which gasoline prices rose at a faster rate in the 12 months to March compared to February.

Source: Statistics Canada, http://www.statcan.gc.ca/pub/62-001-x/2012003/part-partie1-eng.htm

Wholesale Gasoline Prices

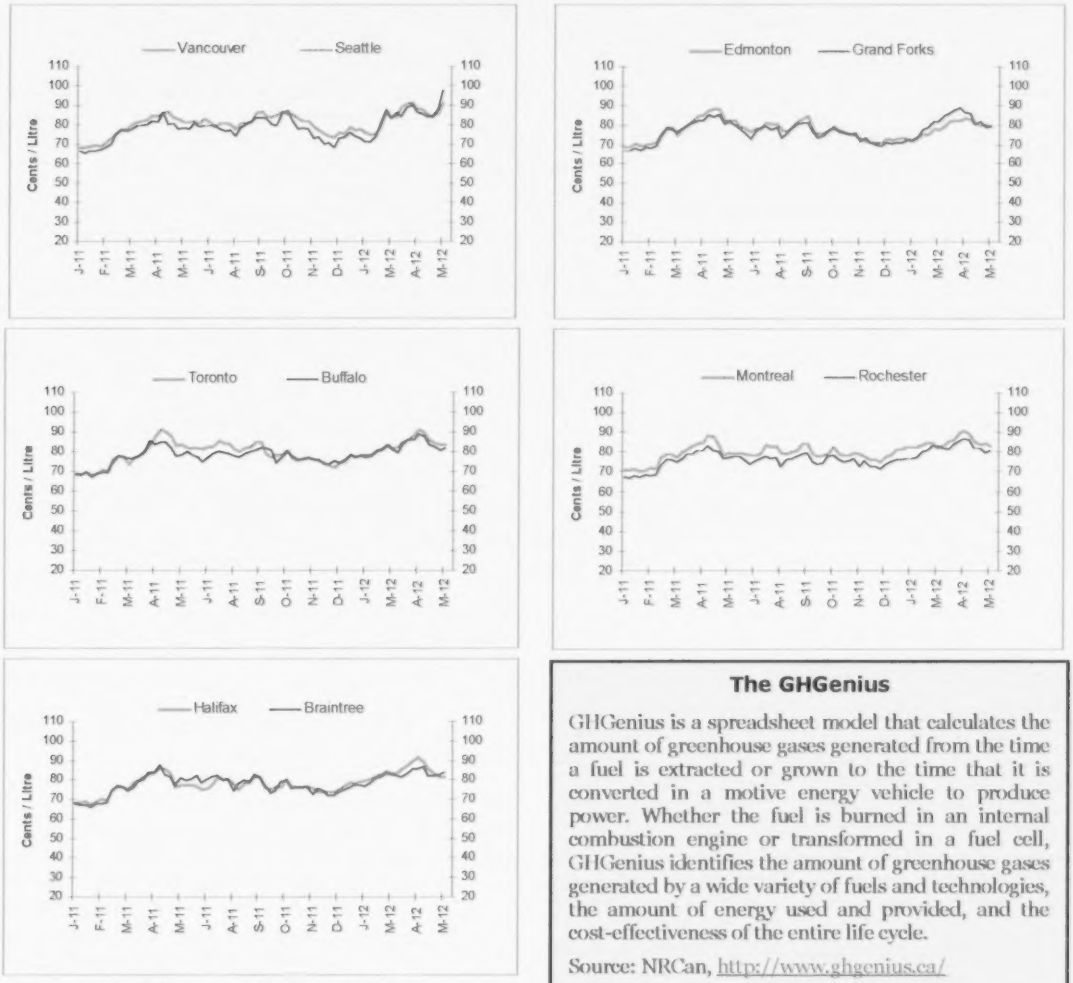
When compared to the previous week, wholesale gasoline prices for the **week of May 10, 2012**, increased in six selected Canadian and American centres. Overall, wholesale gasoline prices ranged between decreases of 1 cent per litre to increases of 9 cents per litre.

Wholesale gasoline prices in the Western centres fluctuated with prices ranging between an increase of 9 cents per litre and a decrease of 1 cent per litre while prices in the Eastern centres ranged between decreases of 1 cent per litre to increases of 1 cent per litre.

Vancouver and Seattle wholesale prices rose significantly as a result of BP's Cherry Point refinery in Ferndale, Washington shutting down for repair after a fire on February 17, 2012. The refinery contributes to Vancouver's gasoline supply. According to the U.S. Department of Energy, gasoline supply on the U.S. West Coast dropped last week to its lowest level since December 2008.

Overall, prices in most selected centres are below last year's level with prices ranging from decreases of 9 cents per litre to increases of 17 cents per litre, compared to the same period last year.

Figure 4: Wholesale Gasoline Prices
Rack Terminal Prices for Selected Canadian and American Cities Ending May 10, 2012
(Can ¢/L)



Sources: NRCan, Bloomberg Oil Buyers Guide

The GHGenius

GHGenius is a spreadsheet model that calculates the amount of greenhouse gases generated from the time a fuel is extracted or grown to the time that it is converted in a motive energy vehicle to produce power. Whether the fuel is burned in an internal combustion engine or transformed in a fuel cell, GHGenius identifies the amount of greenhouse gases generated by a wide variety of fuels and technologies, the amount of energy used and provided, and the cost-effectiveness of the entire life cycle.

Source: NRCan, http://www.ghgenius.ca/

Gasoline Refining and Marketing Margins

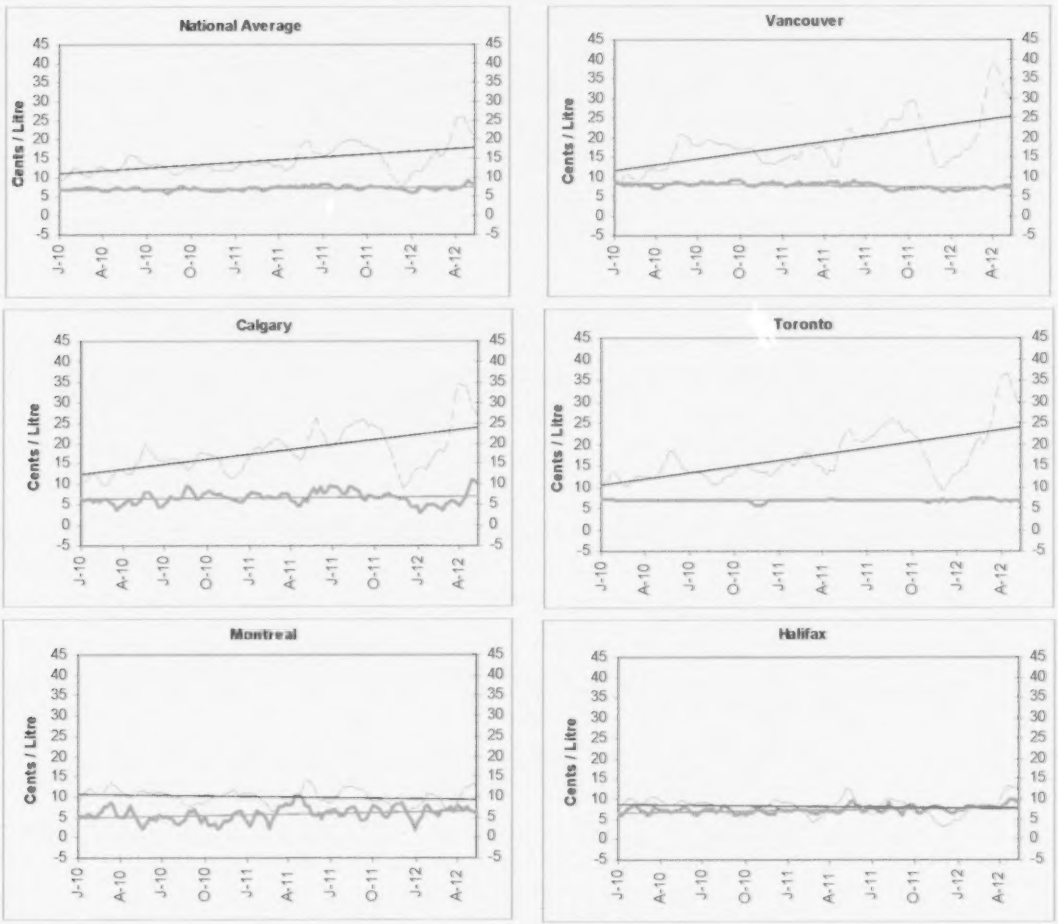
Four-week rolling averages are used for gasoline refining and marketing margins.

Refining margins for gasoline fluctuated downward over the last five weeks. This is indicative of sufficient supplies relative to an expected increase in demand. Heading into the summer driving season, refiners are now producing more gasoline to meet the demand and to increase their inventories.

Refining margins are 3 cents per litre higher at the national level, compared to the same period last year.

Marketing margins, representing the costs associated with operating an outlet, hovered at around 8 cents per litre. For the five centres, marketing margins ranged from a low of 6 cents per litre in Montreal to a high of 10 cents per litre in Calgary.

Figure 5: Gasoline Refining and Marketing Margins
Four-Week Rolling Average Ending May 15, 2012
------- Refining Margin ——— Marketing Margin



Source: NRCan

Crude Oil Overview

WTI and Brent Crude Oil Prices Closing the Gap with Edmonton Par

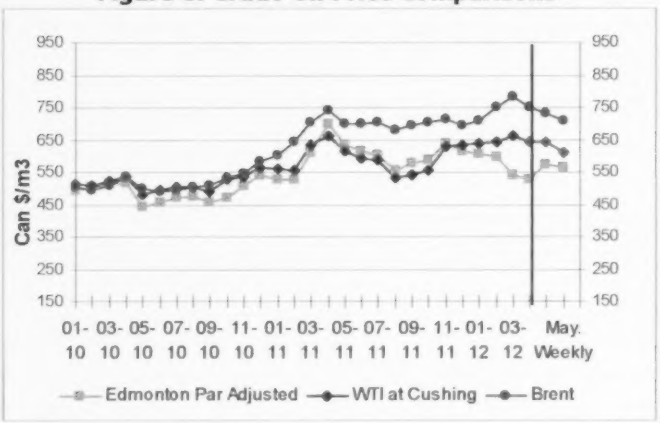
For the week ending May 11, 2012, prices for the three marker crudes averaged between $564/m^3$ and $707/m^3$ (US$90 to US$112 per barrel). This is a decrease of $10 to $34/m^3$ (US$2 to US$6 per barrel) from the previous week.

After climbing since December 2011, Brent and WTI oil prices moved downward in the last seven weeks from their March 2012 peak, by $76 and $50/m^3$ (US$12 and US$8 per barrel), respectively. Crude oil prices were dampened partly due to high U.S. crude oil inventories.

The latest U.S. economic reports also suggest a lackluster recovery putting downward pressure on demand for oil. As global crude oil prices continue to move downward, there are suggestions that Saudi Arabia may release more crude oil on the market to further reduce prices.

The European sovereign debt crisis remains a serious challenge for eurozone countries. The main task now is to prevent further spread of financial damage to countries beyond Greece. This creates uncertainties and weak economic conditions, putting downward pressure on future oil demand.

Figure 6: Crude Oil Price Comparisons



Changes in Crude Oil Prices

Crude Oil Types	Week Ending: 2012-05-11		Change From:			
			Previous Week		Last Year	
	$Can/ m^3	$US/ bbl	$Can/ m^3	$US/ bbl	$Can/ m^3	$US/ bbl
Edmonton Par	564.17	89.82	-9.80	-2.47	-73.90	-15.37
WTI	609.26	96.99	-34.11	-6.46	-1.31	-3.66
Brent	706.90	112.54	-22.77	-4.79	+12.47	-1.94

Source: NRCan

What is the Impact of High Oil Prices on the Global Economy?

According to the International Energy Agency (IEA), if global crude oil prices average US$120 per barrel in 2012, the global oil import burden – defined as total spending by net importing countries on net imports of oil – is set to reach a record high of over US$2 trillion, or US$5.5 billion per day.

Oil price spikes have preceded each global recession since the early 1970s. Today, although the oil intensity (oil consumption per unit of Gross Domestic Product) of the global economy is less, prices still matter, particularly given the fragile state of economic recovery.

Higher energy costs are reducing households' purchasing power, forcing them to cut back on spending on other items or to increase their debt.

Source: International Energy Agency, http://iea.org/newsroomandevents/news/2012/april/name,25467,en.html

Refining Costs and Margins

The graph below shows the historical movements of refining costs and margins from January 2002 to April 17, 2012. Refining margins are calculated as the difference between the wholesale price of gasoline and the crude oil price. Thus, if wholesale gasoline prices rise and crude prices are flat, margins rise; if crude falls, and if wholesale gasoline prices are flat, margins rise.

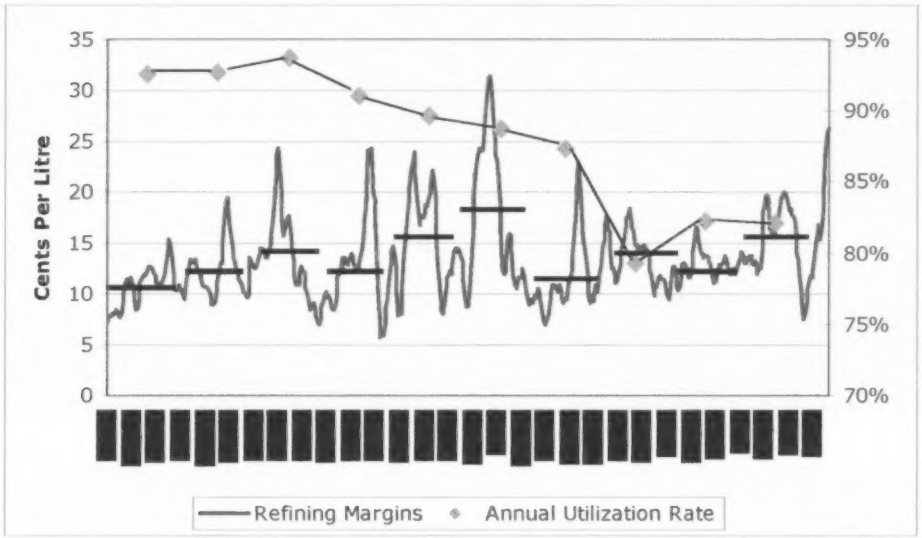
The graph below shows four-week rolling averages. Refining margins have to cover the costs associated with owning, maintaining, and operating a refinery. Refining margins are one indicator of the health of the refining sector. Generally, as refining margins fall, companies and investors exit the refining business, and conversely, if margins are good, there is investment in new refining capacity. Further, unstable or unpredictable margins make it difficult for companies to consider new investments to expand production.

Average refining margins for Canada are quite variable from week to week. Within any one year, margins can range from 6 to 31 cents per litre (¢/l). To illustrate broad trends, the graph also shows the average refining margin for each year (the horizontal bars on the graph).

Causes for rising refining margins include: i) insufficient refining capacity to meet demand; ii) temporary gasoline supply constraints (such as unplanned refinery outages); iii) seasonal increases in demand at the beginning of the summer driving season; iv) lower gasoline inventories (perhaps due to factors i or ii).

Refinery utilization rates are calculated by dividing actual refinery production by refinery processing capacity. As utilization rates approach 100%, this means there is no spare gasoline supply capacity left in the system, and both gasoline prices and refining margins tend to rise. Whenever supply and demand balances are tight, even a small supply disruption will cause upward price pressure and increase the volatility of margins.

Refining Costs and Margins - Jan. 2002 to April 2012 (Constant ¢/l in 2011 $)



Trends in Refining Capacity and Refining Margins

In the early 1980s, refining companies closed some smaller, inefficient facilities, which could not be economically retrofitted to accommodate Canada's cleaner fuel standards, and replaced them with new

larger installations. Canada's remaining 15 refineries now have more than double the refining capacity that existed in the 1960s, when there were 44 refineries.

Through the mid to late 2000s, the growth in demand for petroleum products led to relatively high refinery utilization rates. As shown in the graph, Canada's refineries operated at 89% utilization or higher from 2002 to 2007. During this period, refining margins on average peaked at 17 cents per litre (¢/l).

However, from 2007 to 2009, refinery utilization rates dropped, and refining margins also declined. From the 2007 annual average level of 17 ¢/l, margins then fell to 11.5 ¢/l in 2008, 13.7 ¢/l in 2009, and 12.6 ¢/l in 2010. The market response to low refining margins is to close refineries or cancel expansions, and this is what has happened in recent years (Irving's Eider Rock expansion, Newfoundland and Labrador Refinery at Placentia Bay, Shell Canada Ltd. Refinery expansion in St. Clair, Ontario, the Montreal East Refinery and refineries in the Philadelphia area closed over the 2010 – 2012 period).

In recent months, crude oil prices paid by Canadian refineries has been stable or falling, while wholesale gasoline prices have risen, resulting in higher refining margins. In particular, the costs of crude oil feedstocks for refineries in Sarnia and western Canada have fallen, as pipeline constraints have led to a discount for western Canadian crudes compared to West Texas Intermediate (WTI) or Brent crudes. Edmonton Par (an important feedstock for Edmonton refiners) has fallen from US$100 per barrel in November 2011 to the US$80 range in recent weeks. Over the same period, WTI and Brent have been stable, and are now US$20 (WTI) and US$38 (Brent) per barrel higher than Edmonton Par.

Average Canadian refining margins increased to 15.1 ¢/l in 2011, and in early 2012, averaged 16.6 ¢/l. However, this still falls within the typical range for refining margins, and it is difficult to say whether a new trend of rising refinery margins is truly established. Canadian refinery utilization rates are still not particularly high – in the 83% range. This means there is still considerable slack in gasoline production capacity, which typically dampens margins.